FLORISTIC RELATIONSHIPS OF ONION PEAK WITH SADDLE MOUNTAIN, CLATSOP COUNTY, OREGON

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Clatsop County occupies the northwestern tip of Oregon, bordered on the north by the Columbia River and on the west by the Pacific Ocean. It lies entirely within the Coast Range physiographic province, which in Oregon is a forested region divided between the coastal *Picea sitchensis* zone and the adjacent *Tsuga heterophylla* zone of vegetation (Franklin and Dyrness, 1969). In the geographical center of Clatsop County rises a three-humped, bald, rocky prominence known as Saddle Mountain, 1000 m in elevation and one of the highest peaks in the northern Oregon Coast Range. The flora of this mountain is of particular interest because of the disjunct occurrence here of a number of species from the Olympic Mountains, the Washington and Oregon Cascades, the Columbia River Gorge, and the high Coast Range peaks to the south (Detling, 1954). Saddle Mountain is presently considered to be the southern limit of distribution of several taxa in the Coast Range, including *Cladothamnus pyrolaeflorus, Dodecatheon pulchellum, Anemone multifida, Douglasia laevigata, Erigeron peregrinus* ssp. *peregrinus, Lewisia columbiana* var. *rupicola, Synthyris schizantha,* and *Prenanthes alata.* Two taxa are assumed to be endemic to this peak: *Cardamine pattersonii* and *Saxifraga occidentalis* var. *latipetiolata.*

While Saddle Mountain is easily reached by road and trail, there are several other less accessible high peaks in Clatsop County that might be expected to have a similar flora. These mountains form an almost straight northeast-southwest diagonal across the county, reaching the ocean just south of the Tillamook County line. The map in Figure 1 shows all the areas above 762 m elevation and the principal named peaks. The geology of these highlands is similar, with rocky pinnacles, cliffs, and ridges formed by deeply weathered basalt breccias of Miocene volcanic intrusives that penetrate the surrounding early Tertiary sediments (Schlicker et al., 1972). These bare rocky summits stand above a continuous blanket of forest and support a varied herbaceous and shrubby flora of species adapted to cliffs, ravines, talus, and forest-border habitats. The boreal elements in this flora are probably favored by the cold, stormy winters and the protection from high summer temperatures afforded by shaded north slopes, seepage moisture, and especially by frequent summer fogs off the nearby ocean (Detling, 1954).

Recent logging operations on private land around Onion Peak, 24 km southwest of Saddle Mountain and 934 m in elevation, now allow easy

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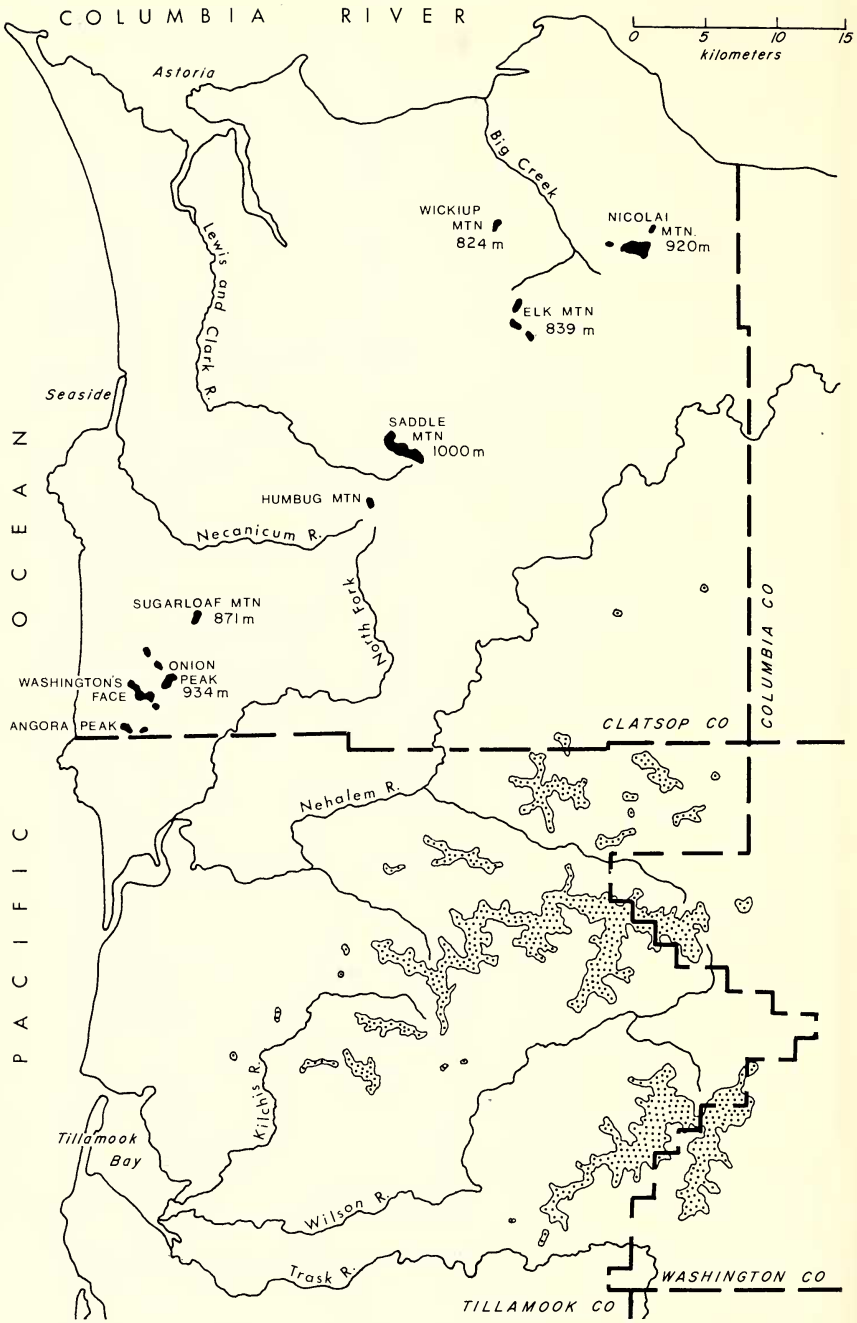

FIG. 1. Map of Clatsop County, Oregon, and parts of adjacent counties. Areas over 762 m elevation are shown in black for Clatsop County and are stippled for Tillamook and Washington Counties.

access to this, the second highest point in Clatsop County. In 1971 and 1972 I made four collecting trips to Onion Peak; the resulting specimens are deposited at Oregon State University and are the basis for the list of species given in this report. The first botanical exploration of Onion Peak was on July 7, 1967, by Dr. L. R. Heckard, who has very kindly allowed me to include his collections (now deposited in OSC and UC) in this report. I have not heard of any other plant collections from this mountain. While it is hoped the present plant list is relatively complete, one must admit that there are inaccessible cliffs and much rugged topography in the vicinity of Onion Peak, so that further additions to the list can be expected from future exploration.

Description of Onion Peak

Onion Peak is the highest point on a series of knobby ridges that include Washington's Face and Angora Peak. The north and west faces of these ridges mostly form precipitous cliffs, with deep weathering along vertical joints in the basalt. Onion Peak is an approximately conical monolith, whose blocky north and west slopes were once forested from base to summit, but whose south and east faces are massive slopes of bare rock. From a base at 730 m elevation, these smooth cliffs rise steeply for 120–150 m and then slope somewhat more gently to the summit. In the top 30–60 m, where the slope is only 30°–40°, there is an area about two acres in extent on which extensive patches of thin soil occur, supporting a fairly rich flora of grasses, forbs, and cryptogams. This small "bald" is a miniature of the similar but much larger areas on Saddle Mountain, which were included in a survey of Coast Range "balds" by Aldrich (1972). The open summit area on Onion Peak gives way abruptly on the north and west sides to a forest of *Abies amabilis* and *Tsuga heterophylla,* with only a narrow shrub border of *Cladothamnus pyrolaeflorus* and *Acer circinatum.* No grassy balds were observed on the adjacent high ridges of Washington's Face or Angora Peak; however, Sugarloaf Mountain, 5.2 km to the north and 871 m high, appears (through binoculars) to have a small bald on its summit.

The "forest" on the upper north and west sides of Onion Peak is a pitiful remnant of a few hundred trees, left after clear-cutting of all the surrounding area during the period of 1960–1965. The trees removed during these logging operations were principally *Thuja plicata, Abies* sp. (probably *Abies amabilis* for the most part, though perhaps some *A. procera*), and *Tsuga heterophylla;* smaller stands of old-growth *Pseudotsuga menziesii* occurred on some of the slopes, while the forests of *Picea sitchensis* at lower elevations to the west had mostly been logged earlier in the century (Dennis Rittenback, pers. comm.). Small stands of uncut forest are left on Washington's Face and the northwest spur of Onion Peak, but the latter is now finally being harvested! The almost complete removal of forest from even the steepest hillsides and

ridge-tops exposes these highlands to severe erosion. The present vegetation on the clear-cuts is mainly *Rubus spectabilis,* and tree regeneration is scarcely evident.

Relationships of the Flora

The grassy bald on Onion Peak is isolated from Saddle Mountain by about 22.5 km of intervening lower-elevation forest. In species composition, their floras have many similarities together with some interesting differences, as will be discussed below. The accompanying map (fig. 1) shows that to the southeast of Onion Peak, in Tillamook and Washington Counties, there are large areas of the Coast Range that exceed 762 m elevation. These mountains, which are at the upper reaches of the Kilchis, Wilson, and Trask Rivers, are within the infamous Tillamook Burn and were devastated by a series of wildfires beginning in 1933. Because the summits of these peaks have been very little visited by botanists, it is not known whether or not the distinctive elements on Onion Peak and Saddle Mountain occur there as well. For comparing the latter two floras, a revised list of 268 taxa for Saddle Mountain (Chambers, unpublished) was used, which differs from Detling's list (1954) by numerous corrections and additions.

The list of vascular plants for Onion Peak is limited to collections made above 730 m; it does not include weeds and adventives that have come in along logging roads or in the clear-cuts. A few of the species were not found on Onion Peak, but were on Washington's Face in a bit of remaining forest at 850 m elevation, about 1.2 km southwest of the peak. The abbreviation "SM" indicates that the species is known to occur on Saddle Mountain. If Clatsop County is either the southern limit or northern limit for a species, in the Coast Range, this is stated in the list. The great majority of species extend both north and south of Onion Peak, either in the Coast Range or the Cascades, or both. The following discussion will call attention to some notable features of the flora. Nomenclature is based principally on Hitchcock et al. (1955–1969).

List of Taxa from Onion Peak

ACERACEAE: *Acer circinatum* Pursh (SM); *A. glabrum* Torr. var. *douglasii* (Hook.) Dippel (SM).

ARALIACEAE: *Oplopanax horridum* (J. E. Smith) Miq. (SM).

BERBERIDACEAE: *Berberis aquifolium* Pursh (see discussion); *B. nervosa* Pursh (SM); *Vancouveria hexandra* (Hook.) Morr. & Dcne. (SM).

BETULACEAE: *Alnus sinuata* (Regel) Rydb. (SM).

CAPRIFOLIACEAE: *Sambucus racemosa* L. ssp. *pubens* (Michx.) House (SM).

CARYOPHYLLACEAE: *Arenaria macrophylla* Hook. (SM); *A. rubella* (Wallenb.) Smith (SM, see discussion); *Cerastium arvense* L.

(SM); *Stellaria crispa* Cham. & Schlecht. (SM).

COMPOSITAE: *Achillea millefolium* L. (SM); *Anaphalis margaritacea* (L.) Benth. & Hook. (SM); *Arnica latifolia* Bong. (SM); *Cirsium edule* Nutt. (SM); *Erigeron peregrinus* (Pursh) Greene ssp. *peregrinus* (SM, southern limit, see discussion); *Eriophyllum lanatum* (Pursh) Forbes (SM); *Hieracium albiflorum* Hook. (SM); *Prenanthes alata* (Hook.) Dietr. (SM, southern limit); *Senecio flettii* Wieg. (southern limit; see discussion).

CRASSULACEAE: *Sedum oreganum* Nutt. (SM); *S. spathulifolium* Hook. (SM).

CRUCIFERAE: *Cardamine pattersonii* Hend. (SM, endemic; see discussion); *Erysimum asperum* (Nutt.) DC. (SM).

CUPRESSACEAE: *Thuja plicata* D. Don (SM).

CYPERACEAE: *Carex mertensii* Bong. (SM).

ERICACEAE: *Cladothamnus pyrolaeflorus* Bong. (SM, southern limit); *Gaultheria shallon* Pursh (SM); *Menziesia ferruginea* Smith (SM); *Pyrola picta* Smith; *P. uniflora* L. (SM); *Vaccinium ovalifolium* Smith (SM); *V. parvifolium* Smith (SM).

FUMARIACEAE: *Dicentra formosa* (Andr.) Walp. (SM).

GRAMINEAE: *Agrostis diegoensis* Vasey (SM); *A. exarata* Trin. spp. *minor* (Hook.) C. L. Hitchc. (SM); *Bromus vulgaris* (Hook.) Shear var. *eximius* Shear; *B. vulgaris* var. *vulgaris* (SM); *Calamagrostis nutkaensis* (Presl) Steud. (SM); *Danthonia californica* Boland. (see discussion); *Deschampsia elongata* (Hook.) Benth. (SM); *Elymus glaucus* Buckl. (SM); *E. hirsutus* Presl (SM); *Festuca rubra* L. (SM, see discussion); *Glyceria elata* (Nash) M. E. Jones; *Koeleria nitida* Nutt. (SM; =*K. cristata* Pers., an illegitimate name); *Melica subulata* (Griseb.) Scribn. (SM); *Phleum alpinum* L. (SM); *Poa gracillima* Vasey (SM); *P. marcida* A. S. Hitchc. (SM); *Trisetum cernuum* Trin. (SM).

HYDROPHYLLACEAE: *Hydrophyllum tenuipes* Heller (SM); *Romanzoffia sitchensis* Bong. (SM).

IRIDACEAE: *Iris tenax* Dougl. ex Lindl. (SM); *Sisyrinchium bermudianum* L. (SM).

JUNCACEAE: *Luzula campestris* (L.) DC. (SM); *L. divaricata* Wats. (SM; =*L. parviflora* ssp. *fastigiata* (E. Mey.) Hamet-Ahti); *L. parviflora* (Ehrh.) Desv. (SM).

LABIATAE: *Prunella vulgaris* L. (SM); *Stachys mexicana* Benth. (SM).

LEGUMINOSAE: *Lotus micranthus* Benth. (SM).

LILIACEAE: *Allium cernuum* Roth (SM); *A. crenulatum* Wieg. (SM); *Camassia quamash* (Pursh) Greene var. *maxima* (Gould) C. L. Hitchc. (see discussion); *Clintonia uniflora* (Schult.) Kunth (SM); *Disporum smithii* (Hook.) Piper (SM); *Erythronium revolutum* Smith (SM); *Lilium columbianum* Hanson (SM); *Maianthemum dilatatum*

(Wood) Nels. & Macbr. (SM); *Scoliopus hallii* Wats.; *Smilacina racemosa* (L.) Desf. (SM); *S. stellata* (L.) Desf. (SM); *Stenanthium occidentale* Gray (SM); *Streptopus amplexifolius* (L.) DC. (SM); *S. roseus* Michx. (SM); *Trillium ovatum* Pursh (SM).

LYCOPODIACEAE: *Lycopodium clavatum* L. (SM).

ONAGRACEAE: *Epilobium alpinum* L. var. *lactiflorum* (Hausskn.) C. L. Hitchc. (SM); *E. angustifolium* L. (SM); *E. glandulosum* Lehm.; *E. minutum* Hook. (SM); *E. watsonii* Barbey (SM).

ORCHIDACEAE: *Corallorhiza mertensiana* Bong. (SM); *Habenaria saccata* Greene (see discussion); *Listera cordata* (L). R. Br. (see discussion).

OXALIDACEAE: *Oxalis oregana* Nutt. (SM).

PINACEAE: *Abies amabilis* (Dougl.) Forbes (SM, see discussion); *Picea sitchensis* (Bong.) Carr. (SM); *Tsuga heterophylla* (Raf.) Sarg. (SM).

POLEMONIACEAE: *Microsteris gracilis* (Hook.) Greene (SM); *Phlox diffusa* Benth. ssp. *longistylis* Wherry (SM).

POLYGONACEAE: *Polygonum nuttallii* Small (SM).

POLYPODIACEAE: *Adiantum pedatum* L. (SM); *Athyrium filix-femina* (L.) Roth ssp. *cyclosorum* (Rupr.) C. Chr.; *Blechnum spicant* (L.) With. (SM); *Cryptogramma crispa* (L.) R. Br. var. *acrostichoides* (R. Br.) Clarke (SM); *Cystopteris fragilis* (L.) Bernh. (SM); *Dryopteris austriaca* (Jacq.) Woynar (SM); *Polypodium glycyrrhiza* D. C. Eaton (SM, see discussion); *Polystichum munitum* (Kaulf.) Presl (SM).

PORTULACACEAE: *Claytonia sibirica* L. (SM); *Lewisia columbiana* (Gray) Robins. var. *rupicola* (English) C. L. Hitchc. (SM, southern limit); *Montia parvifolia* (Moc.) Greene var. *flagellaris* (Bong.) C. L. Hitchc. (SM).

PRIMULACEAE: *Dodecatheon pulchellum* (Raf.) Merrill (SM, see discussion); *Trientalis latifolia* Hook. (SM).

RANUNCULACEAE: *Actaea rubra* (Ait.) Willd. (SM); *Coptis laciniata* Gray; *Delphinium menziesii* DC. var. *pyramidale* (Ewan) C. L. Hitchc. (SM); *Ranunculus uncinatus* D. Don var. *parviflorus* (Torr.) Benson (SM); *Trautvetteria caroliniensis* (Walt.) Vail var. *occidentalis* (Gray) C. L. Hitchc.

RIBESACEAE: *Ribes lacustre* (Pers.) Poir. (SM).

ROSACEAE: *Aruncus sylvester* Kostel. (SM); *Filipendula occidentalis* (Wats.) How. (northern limit, see discussion); *Fragaria vesca* L. (SM); *F. virginiana* Duchesne var. *platypetala* (Rydb.) Hall (SM); *Rosa gymnocarpa* Nutt. (SM); *R. nutkana* Presl (SM); *Rubus pedatus* J. E. Smith (SM); *R. spectabilis* Pursh (SM); *R. ursinus* Cham. & Schlecht. (SM).

RUBIACEAE: *Galium triflorum* Michx. (SM).

SAXIFRAGACEAE: *Boykinia elata* (Nutt.) Greene (SM); *Heuchera*

micrantha Lindl. var. *diversifolia* (Rydb.) R. B. & L. (SM); *Saxifraga bronchialis* L. var. *vespertina* (Small) Rosend. (SM); *S. caespitosa* L. var. *emarginata* (Small) Rosend. (southern limit, see discussion); *S. ferruginea* Grah. var. *macounii* Engl. & Irmsch. (SM); *S. mertensiana* Bong. (SM); *S. oregana* How. (SM); *Tellima grandiflora* (Pursh) Dougl. (SM); *Tiarella trifoliata* L. (SM); *Tolmiea menziesii* (Pursh) T. & G. (SM).

SCROPHULARIACEAE: *Castilleja hispida* Benth. (SM); *C.* sp. (endemic ?, see discussion); *Collinsia parviflora* Lindl. (SM); *Mimulus dentatus* Nutt. ex Benth. (SM); *Nothochelone nemorosus* (Dougl. ex Lindl.) Straw (SM); *Orthocarpus pusillus* Benth. (SM); *Penstemon cardwellii* How. (SM, northern limit, see discussion); *P. serrulatus* Smith (SM); *Synthyris schizantha* (SM, southern limit).

SELAGINELLACEAE: *Selaginella oregana* D. C. Eaton (SM); *S. wallacei* Hieron. (SM).

TAXACEAE: *Taxus brevifolia* Nutt.

UMBELLIFERAE: *Conioselinum chinense* (L.) B. S. P. (SM, see discussion); *Heracleum sphondylium* L. (SM; =*H. lanatum* Michx.); *Lomatium martindalei* C. & R. var. *flavum* (G. N. Jones) Cronq. (SM); *Osmorhiza purpurea* (C. & R.) Suksd. (SM).

VALERIANACEAE: *Valeriana scouleri* Rydb. (SM).

VIOLACEAE: *Viola adunca* Smith (SM); *V. glabella* Nutt. (SM).

Berberis aquifolium, although widely distributed, has not yet been found on Saddle Mountain. On Onion Peak it occurs as dwarfed individuals at the junction of the bald area with the *Cladothamnus* shrub border.

Arenaria rubella is a questionable taxonomic entity in this part of Oregon. Seedlings transplanted from Onion Peak in 1972 flowered the first year and have continued to grow vegetatively since then (they survived subfreezing weather outdoors in Corvallis). The plants of Onion Peak and Saddle Mountain appear to be identical with those of the Queen Charlotte Islands that Calder and Taylor (1968) referred to *Arenaria stricta* Michx. ssp. *macra* (Nels. & Macbr.) Maguire. They are matted and strongly perennial, and thus do not fit *A. stricta* as defined by Hitchcock (Hitchcock et al., Part 2, 1964).

Erigeron peregrinus is represented on Onion Peak by a small but somewhat variable population that is best referred to ssp. *peregrinus.* The rays are white and the phyllaries vary from villous and eglandular to ciliate and dorsally glandular. The Saddle Mountain population is also variable; its rays range from white to violet, and its phyllaries are mostly ciliate with some dorsal glandular puberulence. On Saddle Mountain it grows sympatrically with *E. aliceae* Howell, which is absent from Onion Peak.

Senecio flettii was an unexpected discovery on Onion Peak; it is a

species of the Olympic Mountains and Washington Cascades and has never been found on Saddle Mountain or elsewhere in Oregon. The identification has been confirmed by Dr. T. M. Barkley.

Cardamine pattersonii is one of the rarest of Oregon's endemic species. It was known previously only from its type locality, Saddle Mountain, where it is quite abundant. On the summit bald of Onion Peak, it grows mainly on moss mats over bare rock, together with other ephemerals like *Orthocarpus pusillus, Lotus micranthus, Epilobium minutum, Microsteris gracilis,* and *Collinsia parviflora.* Although annual in its arid natural habitat, *C. pattersonii* will perennate when moisture is available throughout the summer. This was suspected by Hitchcock (Hitchcock et al., Part 2, 1964) and has been verified in potted transplants from Onion Peak, which formed new, vigorous rosettes from the base of the stem after fruiting and were not killed by freezing temperatures during the winter of 1972–1973.

Danthonia californica unexpectedly has not yet been found on Saddle Mountain, although the grassy bald areas there are much more extensive and varied than on Onion Peak.

Festuca rubra is common in the grassy area of both peaks. The report by Detling (1954) of *F. howellii* Hack. ex Beal (a synonym of *F. viridula* Vas.) on Saddle Mountain is probably based on the specimen *Ifft 85* (OSC), which is *F. rubra* misidentified as *F. howellii.*

Camassia quamash is abundant and very conspicuous in the deeper patches of soil on the Onion Peak bald. It could hardly have been overlooked on Saddle Mountain, so its absence there, although unexplained, is probably significant.

Habenaria saccata and *Listera cordata* are no doubt to be expected on or near Saddle Mountain, but I have seen no collections. Both *H. unalascensis* (Spreng.) Wats. and *H. greenei* Jeps. are common on Saddle Mountain, and *L. caurina* Piper has been found there. Proving the non-occurrence of particular orchid species, and also of various pyroloid and monotropoid Ericaceae, is difficult. *Chimaphila menziesii* (R. Br.) Spreng. ought to be found on both peaks, but has not been verified on either; *Monotropa uniflora* L. was found on Saddle Mountain but not Onion Peak.

Abies amabilis is the only fir in the forest remnants of Onion Peak and Washington's Face; on Saddle Mountain, however, *A. procera* Rehd. is common and *A. amabilis* is apparently rare. Another interesting conifer reported from Saddle Mountain is *Chamaecyparis nootkatensis* (D. Don) Spach, although I personally have not seen it there nor on Onion Peak.

Polypodium glycyrrhiza is the only species of this genus on Onion Peak, whereas on Saddle Mountain it occurs sympatrically with *P. montense* F. Lang.

The *Dodecatheon* found on Onion Peak and Saddle Mountain is

difficult to identify with assurance. Because of its dark connective and short, dark, free filaments, as well as its broad leaves that taper abruptly into the petiole, it superficially resembles *D. jeffreyi* Van Houtte of the type found in the Queen Charlotte Islands and southeast Alaska (e.g. *Jaques 1500,* Prince of Wales Island, OSC). However, the connective is smooth, the stigma is not very much enlarged, and the herbage is glabrous on some plants (although lightly glandular on others). Thompson (1953) specifically discussed the Saddle Mountain population and concluded it could be connected with *D. pulchellum* (*D. radicatum* Greene of his treatment) through intermediates in the Columbia River gorge. Since I have no new evidence to offer, I am following Thompson's judgment.

Filipendula occidentalis is a rarely collected Oregon endemic, whose range is now known to extend north to Clatsop County and south to Lincoln County (*Henderson s.n.,* Aug. 4, 1928, Upper Siletz River; ORE). It has not yet been found on Saddle Mountain.

The population of *Saxifraga caespotosa* on Onion Peak better matches var. *emarginata,* of the Olympic Mountains and northward, than var. *subgemmifera* (Engl. & Irmsch.) C. L. Hitchc., found on adjacent Saddle Mountain. The differences are subtle ones of habit and leaf pubescence (Hitchcock et al., Part 3, 1961).

There is an apparently undescribed taxon of *Castilleja,* currently under study by Dr. Noel Holmgren, which was found on Onion Peak but has been searched for without success on Saddle Mountain. It somewhat resembles *C. parviflora* Bong. var. *oreopola* (Greenm.) Ownbey, but has corollas about 32 mm long.

Penstemon cardwellii reaches its northen limit in the Coast Range on Saddle Mountain. Detling's (1954) report of *P. menziesii* Hook. from there probably was based on *Patterson 92* (at ORE), which proves to be *P. cardwellii* instead.

Conioselinum chinense has been confused with *Ligusticum apiifolium* (Nutt.) Gray; the latter was listed from Saddle Mountain (Detling, 1954) but this appears to be an error based on the specimen *Ifft 136* (OSC), which is *C. chinense* initially misidentified as *Ligusticum.*

Summary

The grassy bald atop Onion Peak is very much smaller than that on Saddle Mountain, but the two share many characteristic species. A partial listing of these is: *Arenaria rubella, Cerastium arvense, Erigeron peregrinus, Cardamine pattersonii, Cladothamnus pyrolaeflorus, Poa gracillima, Allium crenulatum, Phlox diffusa* ssp. *longistylis, Lewisia columbiana* var. *rupicola, Dodecatheon pulchellum, Saxifraga bronchialis* var. *vespertina, S. ferruginea* var. *macounii, Penstemon cardwellii,* and *Lomatium martindalei* var. *flavum.*

Plants found on Onion Peak but not on Saddle Mountain include:

Berberis aquifolium, Senecio flettii, Danthonia californica, Camassia quamash, Saxifraga caespitosa var. *emarginata,* and *Castilleja* sp.

Many species that occur on the open summits of Saddle Mountain are missing from Onion Peak. Selected examples of this group are: *Cryptantha intermedia* (Gray) Greene, *Campanula rotundifolia* L., *Silene douglasii* Hook., *Erigeron aliceae* How., *Agoseris aurantiaca* (Hook.) Greene, *Rudbeckia occidentalis* Nutt., *Senecio macounii* Greene, *Arabis hirsuta* (L.) Scop., *Poa sandbergii* Vas., *Phacelia nemoralis* Greene, *Trifolium longipes* Nutt., *T. microdon* H. & A., *T. microcephalum* Pursh, *Lloydia serotina* (L.) Sweet, *Erythronium grandiflorum* Pursh, *Sidalcea hirtipes* C. L. Hitchc., *Clarkia amoena* (Lehm.) Nels. & Macbr., *Collomia heterophylla* Hook., *Polygonum bistortoides* Pursh, *Douglasia laevigata* Gray, *Anemone multifida* Poir., *Thalictrum occidentale* Gray, *Geum triflorum* Pursh, *Potentilla gracilis* Hook., *Lithophragma parviflora* (Hook.) T. & G., *Saxifraga occidentalis* Wats., *Rhinanthus cristagalli* L., *Sanicula graveolens* DC., *Perideridia gairdneri* (H. & A.) Mathias, and *Plectritis congesta* (Lindl.) DC.

Many of the boreal elements in the flora of Saddle Mountain, as defined by Detling (1954), are now known to be present as well at the summit of Onion Peak. Since the latter is only 6.4 km from the ocean, it may differ climatically from the former, which is 11.3 km farther inland. In sum, however, the flora of Onion Peak is a generous sampling of Saddle Mountain with a few added novelties.

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